GENX CHEMICALS AND PFBS
CAPE FEAR, NORTH CAROLINA AND PARKERSBURG, WEST VIRGINIA

Background:

- GenX is a trade name for a technology that is used to make high performance fluoropolymers without the use of perfluorooctanoic acid (PFOA). Hexafluoropropylene oxide (HFPO) dimer acid and its ammonium salt are the major chemicals associated with the GenX technology. GenX chemicals have been found in surface water, groundwater, finished drinking water, rainwater, and air emissions in some areas.
- Perfluorobutane sulfonic acid (PFBS) is a replacement chemical for PFOS. PFBS has been identified in the environment and consumer products, including surface water, wastewater, drinking water, dust, carpeting and carpet cleaners, floor wax, and food packaging.

Toxicity Assessments

- EPA released draft toxicity assessments for GenX chemicals and PFBS for public comment in November 2018. The public comment period ends on January 22, 2019.
- As a part of the assessment, EPA developed draft oral reference doses (RfDs) for GenX chemicals and PFBS.
- A reference dose is an estimate of the amount of a chemical a person can ingest daily over a lifetime (chronic RfD) or less (subchronic RfD) that is unlikely to lead to adverse health effects.

Chemical	Chronic RfD (mg/kg-day)
PFBS	0.01*
GENX chemicals	0.00008*
PFOA	0.00002
PFOS	0.00002
	*indicates draft value

- Overall, the available oral toxicity studies show that the liver is especially sensitive to GenX chemicals, and the kidney and thyroid are sensitive to PFBS. EPA has requested public comment on these complex relationships.
- The draft RfD for PFBS suggests it is less toxic than GenX chemicals, perfluorooctanoic acid (PFOA), and perfluorooctane sulfonate (PFOS). The draft RfD for GenX chemicals suggests that they are less toxic than PFOA and PFOS.
- However, these draft values may change in response to public comment.
- Toxicity is only one piece of information that public officials consider when determining whether there is a risk to public health. Other factors, such as exposure, must also be considered.
- The American Chemistry Council and the Natural Resource Defense Council requested an extension to the public comment period. Based on the extensive outreach EPA conducted and interest in rapidly finalizing the values for states to use, EPA considered the 60-day comment period appropriate and denied their requests.

Cape Fear Watershed, North Carolina

- Since 1980, Chemours produced GenX (HFPO-DA) and discharged this substance into the Cape Fear River.
- In 2009, the EPA issued a TSCA Section 5(e) Consent Order to DuPont (now Chemours, since July 2015), in response to a pre-manufacture notice (PMN) submitted by DuPont, which required health and environmental testing, and specific regulatory controls to mitigate worker exposures, environmental releases, and the amount of impurities permissible in the final polymers.
- In 2015 and 2016 scientists from EPA's Office of Research and Development and collaborators, published papers that first identified the presence and then quantified GenX chemicals and other per- and polyfluoroalkyl substances (PFAS) in the Cape Fear River as well as in downstream public water systems. These papers did not contain any health effects information regarding GenX chemicals.

Parkersburg, West Virginia

- Since the early 1950s, DuPont manufactured Teflon at its Washington Works facility west of Parkersburg, WV, which used PFOA in the Teflon manufacturing process.
- Since 2002, EPA Regions 3 and 5 have issued a series of Safe Drinking Water Act (SDWA) Orders to DuPont and, later, the current facility owner, Chemours, to address PFOA contamination of public and private water supplies in West Virginia and Ohio.
- The Orders have required DuPont and Chemours to test hundreds of water supplies within designated areas in those two states.
- GenX chemicals replaced PFOA in 2013 in the Teflon manufacturing process.
- Recent monitoring has identified low levels of the GenX compound in the untreated ground water that serves as the source of several public and private water supplies near the Washington Works facility.
- The carbon treatment in place for each of these water supplies has been effective in removing GenX in the finished water.
- Regions 3 and 5 requested Chemours to continue sampling wells on a quarterly basis where GenX was found in the untreated water and Chemours has agreed to do so. EPA is posting the GenX results online.
- EPA continues to monitor this ongoing effort to ensure the companies adhere to the orders.

Talking Points:

Toxicity Assessments

- The draft toxicity assessments for GenX chemicals and PFBS are available for public comment until January 22.
- Draft toxicity assessments are made available to provide states, tribes and local governments with the tools they need to better understand PFBS and GenX chemicals.
  EPA intends to move forward quickly to provide the final assessments to states and local communities to help inform their decisions and actions.

Cape Fear, North Carolina

- Since June 2017, EPA has worked with the state of North Carolina, utilities and local communities in addressing GenX chemicals.
- Today, all process wastewater discharges from the site have been suspended, water served by public utilities has GenX levels below the NC GenX Health Goal of 140 ppt, and efforts continue to ensure that citizens with impacted private wells are provided with safe water.
- EPA is conducting an ongoing evaluation of Chemours' compliance with TSCA.

Parkersburg, West Virginia

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- The Orders have required DuPont and Chemours to test hundreds of water supplies within designated areas in those two states.
- The carbon treatment in place on each of these water supplies has been effective in removing GenX in the finished water.
- EPA continues to monitor this ongoing effort to ensure the companies adhere to the orders.